AR
Ns

EDITOR:
C. T. WEST, WD4HSI
1611 Craig Street
Raleigh, N. C.

CLUB REPEATER:
WR4ACF (146.04/64)

CLUB CALL:
W4DW

RALEIGH AMATEUR RADIO SOCIETY
RARS
WORLDWIDE FRIENDSHIP

ARRL
AFFILIATE

"RALEIGH AMATEUR RADIO SOCIETY NEWS"

AUGUST 1978 ISSUE 106

HAM CLASSES BEGIN AT NCSU SEPTEMBER 11

by

Pat Whetzel, WA4CLT

I'm sure everyone has heard quite a few new calls on two meters lately. A lot of the credit goes to the instructor staff who gave of their time and talents to conduct the general upgrade class last spring. The class was so successful that we are going to do it again this fall. We now have an agreement with the Cary club to conduct two classes each year. We will conduct the upgrade classes and Cary will teach the novice classes.

If you have seen the new fall semester catalogue from NCSU you should have seen the listing for the classes under the section for continuing education. The classes are scheduled to begin Monday, Sept. 11, 1978. The classes will be held each Monday night from 7 to 9pm at the McKimmon center at NCSU.

We will need about 4 or 5 instructors for the fall session. There will be a meeting of all potential instructors around the end of August.

Anyone interested in getting on our instructor list should call me at 876-6055.

If you have any Novice friends interested in upgrading, be sure

PUBLISHED MONTHLY BY THE RALEIGH AMATEUR RADIO SOCIETY, INC., P.O. BOX 17124, RALEIGH, NORTH CAROLINA 27609 ■ MATERIAL CONTAINED HEREIN MAY BE REPRINTED WITHOUT PRIOR PERMISSION WITH CREDIT GIVEN THIS PUBLICATION ■ TECHNICAL EDITOR - JACK KENNEY, WB4MCU ■ EC, WAKE CO. - BERT BAILEY, W4FMN ■ OFFICERS: PRESIDENT - CHUCK LITTLEWOOD, K4HF; VICE PRESIDENT - LYNN PENDLETON, K4NYV; SECRETARY - JIM PEELER, WA4YOM; TREASURER - RALPH RIGDON, WB4SDU ■ PRINTED BY QUIKCOPY, RALEIGH, NORTH CAROLINA 27608

to tell them of the class.

The last class graduated 48 out of about 70 students. Let's make the next class another success.

Pat WA4CLT

NEW RARS MEMBERS

by

Ralph Rigdon, WB4SDU
Treasurer of RARS

Raleigh Amateur Radio Society gained four new members at the July meeting.

The new members are:

Carl C. Van Cott, KB4BG
4909 Brookhurst Place
Raleigh, N. C. 27609

James L. Bunch, WD4NLV
2121-A North Hills Drive
Raleigh, N. C. 27612

Steven W. Rynders, KA4BWW
4612 Lindsay Drive
Raleigh, N. C. 27612

Jim E. Bradley, WA4AOO
5207 Denise Drive
Raleigh, N. C. 27606

Nine visitors attended the July meeting.

FOR SALE: Yaesu FL-2100B linear amplifier. 80 - 10 meters. Ron Oates, AA4VK, 787-3640

Corns' Corner

BOB SUGGESTS ANTENNA TUNER

by

Bob Corns, K4MC

I am not an Official Observer (OO), but I do listen now and then to frequencies other than amateur band frequencies. Almost every time I get around the novice band (80 meters) harmonic frequencies, I hear novice signals.

These signals are illegal, and someone is going to get a pink ticket sooner or later.

The frequencies where I hear most of these signals are 7400/7500 and 11,100/11,250.

An antenna tuner would help in eliminating most of these harmonics.

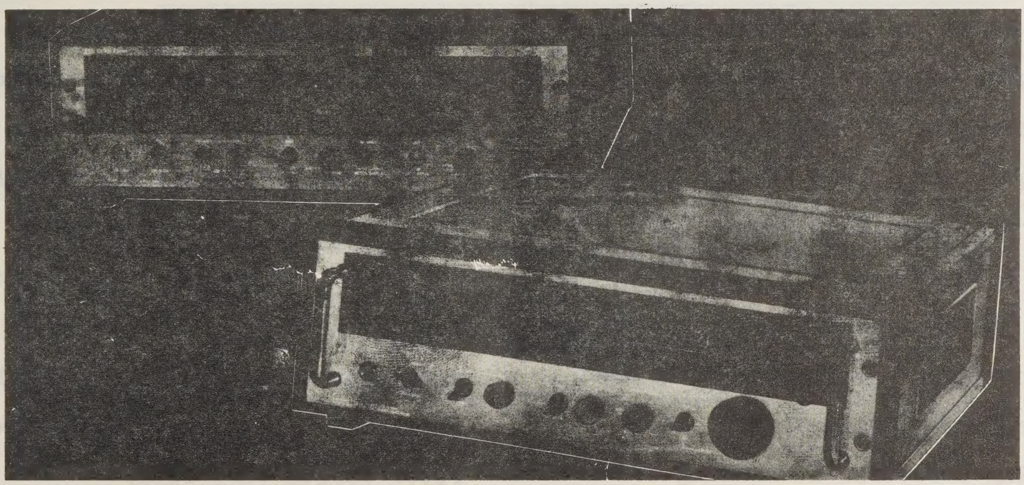
A brand new, modern transceiver can be just as bad as an old rig, probably worse, as most of the old rigs had a pi output.

I suggest that those who do not use an antenna tuner acquire one.

If you have a receiver that will cover the harmonic frequencies, listen when the bands are active. You'll see what I'm talking about.

an extraordinary combination of digitally synthesized receivers...

each with built-in capacity to satisfy a broad spectrum of singular applications.



ITT Mackay Marine 3020A and 3021A Radio Receivers feature solid state construction, dual conversion and super-heterodyne design providing continuous frequency coverage from 15kHz to 29.9999MHz. Frequency selection is accomplished by step tuning, while the 3021A Receiver uses sweep tuning. These receivers meet strict requirements of British MPT, German FTZ, Norwegian NTA, Dutch and Spanish PTT and Canadian DOC, and can be used wherever maximum reliability and ease of maintenance are required.

Write or call Ed Engebretson, General Sales Manager today for complete information on these two quality, high performance receivers.

ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, North Carolina 27611. Telephone: (919) 828-4441.

ITT Mackay Marine
Mr. Ed Engebretson, General Sales Manager
2912 Wake Forest Road
Raleigh, North Carolina 27611

Please send complete FREE information on the exciting new:

☐ 3020A Step Tuning Receiver
☐ 3021A Sweep Tuning Receiver

NAME ____________________ TITLE __________
COMPANY ______________________________
ADDRESS ______________________________
CITY __________ STATE __________ ZIP __________
COUNTRY ______________________________

Federal Supply Schedule Group 58 Part VII,
Contract GS-OOS-24016

ITT *Mackay Marine*

CHECKING WITH CHUCK

by

Chuck Littlewood, K4HF
President, RARS

Many RARS members enjoyed the Cary Amateur Radio Club Swapfest July 15. By far their most successful fest yet, folks came from all over the state. Good to see ARRL's W4ACY and AA4R (ex-K4GHR) present.

WD4SKP is new on two meters. WA4YOM and K4HF worked the IARU Radiosport QSO Party. AA4VK, AA4BA, W4YZX, and WB4YBF were heard working the 10-10 Summer QSO Party.

From HR Report:

Taking a second amateur exam so soon after passing the first that the first application is still being processed is causing computer headaches in Gettysburg. Always answer the Form 610 item that asks about other pending applications and provide details when appropriate to avoid unnecessary processing delays.

RARS received a letter of appreciation from WD4NWO for our assistance in his obtaining his ham ticket. RARS also received a note of thanks from Bill and Laura McDowell for the flowers during their recent bereavement.

There is still time to help out at the RARS booth at the CB Jamboree 12:00 noon to 6:00 p.m. Saturday or Sunday, August 5 and 6. See Bill Feehan, WB4EOV at the regular RARS Meeting August 2.

Suzanne Meyer, WB4USX, will be married August 5. WB4PZW and WB4ZSM will be in attendance from RARS.

Preliminary totals for the RARS Field Day are 1133 QSO's, with 396 on CW. This was a fine effort for the RARS gang, particularly with many operators coming out for the first time. Our new gasoline generator worked very well.

Thanks go to WPTF Radio, N4UE, The Raleigh Times, WB4ZSM and Cablevision, and WD4HSI for their fine efforts with the publicity for the event.

The RARS by-laws are in the process of being revised. If you have any suggested changes or additions, please come to the RARS Board meeting or contact Jim Peeler, WA4YOM, RARS Secretary.

FOR SALE: Hammarlund HQ-129X general coverage receiver. Been modified, still works. Non-matching speaker included. Asking $70. Joe Henderson, WD4MRD, was last user. Jesse Hodges, W4JG, 833-0229.

MUST SELL: Two meter Minivox handheld transceiver. Comes with toichtone pad and crystals for 22/82, 52/52, 04/64, and 28/88. Manual, charger, and leather case. Works OK, but would benefit from any tinkering. $85.00. Bruce Morgan, WA4ODM, 876-0692

MINUTES OF MEETING - July 5, 1978

The regular monthly meeting of the Raleigh Amateur Society (RARS) was held in the West Community Room at Crabtree Valley Shopping Mall on July 5, 1978. The meeting was called to order by President Chuck Littlewood, K4HF. Members and guests were welcomed.

President Littlewood, K4HF, made the following announcements: Up-coming hamfests: Cary Swapfest, 10:00 a.m. - 3:00 p.m., July 15; Fayetteville Hamfest in Dunn, N. C., August 19-20; Charleston, S. C. Hamfest, July 8-9.

Club dues must be paid to receive the newsletter. The mailing list is being updated to include only those who have paid their 1978 dues.

The Club has need for a good IBM Executive typewriter for use on the newsletter. Anyone knowing of a good deal please contact Chuck Littlewood, K4HF.

W4DW made approximately 1200 contacts (400 cw, 800 phone) during Field Day. Two stations plus a novice station, WD4RDT, were operated. Special congratulations were extended to the faithful that did a FB job operating the novice station. Several Club members operated a separate station using the call K4PU. K4PU racked up 1200 cw contacts. Congratulations!

A sample of 450 OHM KW twinlead was shown and those interested were invited to join in on a group order at $9/100 ft.

The Annual CB Jamboree will be held at the Scott Pavilion on Aug. 5 and 6. RARS sponsors a booth at this event and volunteers are needed. If available, contact Chuck Littlewood, K4HF.

The IARU Radio-Sport championship will be held July 8-9. Check May QST for details. Good chance to work some DX and "rare" states.

The FCC ban on ten meter amplifiers has been upheld by the Commission.

Paul Sims, WB4YBF, reminded the group of the 10-X contest coming up July 21. See QST for details.

Bert Bailey, W4FMN, announced that the CD shelter manager's meeting to be held at CD Headquarters will be open to those interested. The meeting is scheduled for July 8, 8:30 a.m. to 7:00 p.m. A weather-watch group is being organized. If interested, contact Bert Bailey, W4FMN. Net controls and alternates are needed for the RARS two meter net. Call Bert. Check in on the 220 net Tuesday and Thursday at 9:00 p.m. and Bert will call you (Hi Hi).

C. T. West, WD4HSI, RARS Newsletter Editor, thanked the group for articles contributed and urged members to continue to participate in the Newsletter by writing articles.

Bob Herman, N4NC, and Steve Riddle, WA4AFT, of the North Carolina Division of Civil Preparedness presented the program for the evening. A film entitled "Tornado" was shown which depicted a tornado disaster in Texas. A slide presentation was also presented which showed the communications equipment setup at the division here in Raleigh. Bob described the setup and answered questions concerning the Division and how amateurs could be of assistance. Thanks Bob and Steve for an interesting and informative program.

The prize drawing resulted in Pat Whetzel, WA4CLT, receiving the honors as guest editor and Ralph Rigdon, WB4SDU, won a nice vise for electronic work. Coffee and doughnuts were served and the meeting was adjourned.

Jim Peeler, WA4YOM
Secretary of RARS

TNXFER PRINTOUT ON SCOPE
SHERM. 73 WD4NWO

Slim Jim® Meat Snacks

A LITTLE LESS THAN A MEAL.
A LITTLE MORE THAN A SNACK.

GoodMark, Inc.

GoodMark, Inc., Raleigh, N.C. 27609
A Division of General Mills, Inc.

The Evolution Of The Amateur Antenna System - OR - Return With Us Now To Those Golden Days of Radio --

by

Bob Johnson, AA4L

In the immediate prewar and postwar era (WW2 that is) the typical amateur transmitter was of open construction, with the bulk of its inner workings quite exposed to the vulgar public gaze. Band changes were accomplished by means of plug-in coils. Final amplifiers usually consisted of two tubes, operated in push-pull. The push-pull configuration reduced second harmonic output, but more importantly, simplified neutralization. In those days neutralization of a triode or early tetrode final amplifier was a much discussed subject at club meetings and hamfests. It was considered to be a technological black art, and held the same fascination for most of us old timers that the 1:1 SWR holds for the later comers.

Coupling of the antenna to the oh-so-carefully neutralized final amplifier tank circuit was accomplished in a variety of ways. Many of us took the straightforward approach and brought one end of the antenna into the shack, attaching it to some convenient point on the tank coil by means of a large crocodile clip. Using such sophisticated instrumentation as flashlight bulbs, neon lamps and the plate current meter, the proper tap location was found and carefully recorded in one's logbook. The more safety conscious included a blocking condenser to keep the plate voltage off the antenna. However, that refinement cost money, and in that era it was usually safer to fondle a fellow ham's XYL than his antenna. Antenna transmit-receive changeover usually involved a six-inch double throw knife switch, with a porcelain base and brightly burnished copper blade. Some of us got into the habit of being a trifle long winded. It might require throwing three or four switches to get the station from transmit to receive, and why do all that work if you could think of anything else to say?

One end of the antenna in the shack led to occasional complications such as RF burns on the nose if one got too close to the mike, and a tendency for one's hair to stand on end on modulation peaks. Those of us who desired to keep the radiating parts of the system out among the elms used a feedline laboriously constructed of two pieces of #10 copper wire spaced six inches by sections of half-inch wooden dowel. The dowels were boiled in molten paraffin for at least a half hour. Millen and others made very nice ceramic insulators for this purpose, but they were considered an ostentatious and fragile extravagance by the practical ham.

Popular configurations of the day were the center-fed and end-fed Zepps, consisting of 135 feet of wire fed by 67 feet of feedline. These antennas worked nicely on all four bands (there was no 15 meter band). In the case of the end-fed antenna, one feed line wire was connected to nothing at all at the antenna end. (Ask any old timer to explain.) Of course, these antennas required the use of a tuner mounted on the shack wall adjacent to the window where the feedline entered. (The proper technique for drilling holes in window glass was the subject of innumerable QST Hints and Kinks. None of them worked.) The connection between the tuner and transmitter was by means of a low impedance link, usually twisted pair lampcord. Coupling or loading was controlled by "swinging links" or movable coils at the tank circuits. The loading adjustment was performed by poking at the coils with a stick until things seemed right.

The value of directive antennas for the very high (20 meters) and ultra high (10 meters) frequencies was recognized and wire arrays were frequently constructed. The most popular were the 8JK (flat-top beam) and the Lazy-H. A very popular rotatable parasitic array for 20 meters consisted of three 33 foot aluminum tubing elements mounted on a twenty foot Sears Roebuck wooden ladder used as a boom. This graceful contrivance was usually situated on a second-hand farm windmill tower and rotated by means of an ingenious arrangement of windlasses, ropes and pulleys. Various means were used to keep the open wire feeders from tangling as the antenna rotated. None of them worked. In postwar years the surplus prop-pitched motor was pressed into service as a rotator.

A lunatic fringe of that era spoke knowledgably of flat lines and low VSWR. These hams used single band doublets center fed with rubber insulated twisted pair. Their stations were distinguished by S3 signals (S1 in wet weather) and a strong odor of burning inner tubes.

In the late forties and early fifties, the advent of television brought a revolution to ham radio. The high level modulation techniques then in use required that the transmitter final amplifier be operated with lots of bias and lots of drive, generating thereby lots of harmonics. Hams and Uncle Milty watchers could not peacefully coexist in the same block. It became necessary to place the transmitter in an RF-tight enclosure, to keep the TVI inside. This ended the era of the plug-in coil and the swinging link. The pi network came into widespread use because it was simple to bandswitch and loading control could be implemented from the front panel. The output of the transmitter was conducted, by means of coaxial cable, to a low pass filter, where the TVI was separated and mysteriously disposed of. However, the filter would not work (and might possibly explode) if it was not terminated in its characteristic impedance. So we built bridges and SWR meters and pursued the elusive 1:1 VSWR. Many myths of that era are perpetuated today. For instance: "Standing waves cause TVI";"Coax feed prevents TVI"; "Reflected power isn't radiated -it comes back down the feedline and burns up the transmitter"; and others equally fallacious. One bright spot was the ready availability of war-surplus coax for a few dollars per mile. It was needed between the transmitter and low pass filter and it became convenient to use it everywhere.

Somewhat later, in the late fifties and early sixties, the ubiquitous one-eyed monster accelerated the move to single sideband. The linear amplifier materially reduced harmonic generation. Also, it became easier for the generator of TVI to remain anonymous since audio interference was in the form of duck quacks, rather than call letters.

The whippersnappers among you should understand that the antennas of the golden years were theoretically sound and highly effective. The definetive treatise on antenna theory were all written by the early thirties, and there have been no significant breakthroughs since, although the availability of the digital computer has simplified the design process for complex and specialized arrays.

Today's antennas are designed for improved appearance, easy installation and operating convenience. Usually, these objectives are accomplished without significant loss in outright performance. However, the old style Zepp antenna,fed with open wire line, is a more efficient multiband antenna than the best of today's trap dipoles.

Finally, for those of you who are still convinced that low VSWR and broad frequency response are the ultimate measurement of antenna system quality, may I suggest that you carefully analyze the performance parameters of your dummy load?

73, Bob AA4L

SUPPORT RARS ADVERTISERS.

THEY SUPPORT

AMATEUR RADIO.

"AMATEUR ASSOCIATES"

"IN" "STOCK"

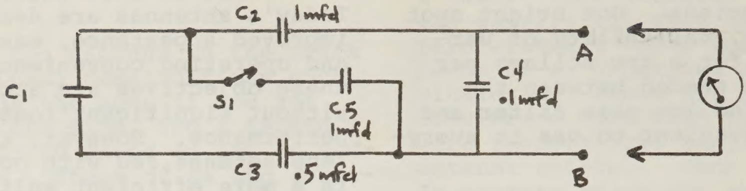
- ANTENNA TOWERS AND ACCESSORIES
- ANTENNA ROTORS AND ROTOR CABLE
- COPPERWELD ANTENNA WIRE AND INSULATORS
- RG 8/U AND RG 8X COAX CABLE--PL 259s

" GET A QUOTE FROM US BEFORE YOU DECIDE TO BUY"

HAM COOPER WB4SZZ-JACK KENNY WB4MCU

TELEPHONE 919-833-9672 RALEIGH, N. C.

Electronic Brain Teaser #2



With S1 open, what should a capacity meter read if connected to points A and B, and C1 were:

A. 1 mfd ______? 2 mfd ______? 3 mfd ______? and

B. If C1 were 3 mfd and S1 were closed? ______

Answers to Brain Teaser #1:

A. I1 and I2 brightest (10 v), I3 medium (4 v), I4 and I5 dimmest (2 v each).

B. I1 brightest (14 v), I2 and I3 medium (5 v), I4 and I6 dim (4v), I5 off (ov).

--Jack Hanner, K4IHS

AMATEUR RADIO:

WHO NEEDS AMATEUR RADIO?

by

Mike Everette, WA4DLF

Amateur Radio. It's a wonderful hobby. One can do all sorts of things with it.... like... yeah man!!! work that Dawg Ex-ray on gud ol' 20 meters with enough power in th' ol' leanyer to melt them there antennys overseas. Or even better is workin' them contests like Sweepstakes or the WWDX. An' collectin' them counties... why sum folks has worked ever one in the Hew Hess Hay. Wish Ah cud do that...but I spend mosta my time on that fine 2 meter rice box. That thang can talk near bout all over th' state with them repeaters... we talk bout all kindsa things... how well we's makin' it inta th' mow-sheen... what kinda sin-thee- sizers we use... TRAFFIC!??

EE-MERGENCY PRE*PAREDNESS??%$#"**!(! Ah ain't got TIME fer them thangs, man!!!

Well, well, well. So that's how it is. And in your heart you know it's the truth. Let's see where this stupidity has gotten us:

HAVE YOU HEARD OF RM- 3059??? NO?? Well, I am not surprised. It does not deal with the Amateur rules-- not directly. Therefore, the amateur press paid no attention to this document. Even the selfrighteous, sanctimonious ARRL, whom most of us-- myself included-- subsidize to look after our ham well being-- let this one slip by.

RM-3059 is a Petition for Rulemaking filed back last winter with FCC by the Associated Public Safety Communications Officers, Inc. (APCO). It asks the FCC to set up a new Civil Preparedness Radio Service under Part 89 of FCC rules. This new service will provide state civil defense agencies with a system of HF-SSB nets which will enable states to rapidly establish long-haul communications between their headquarters or Emergency Operations Centers and a disaster scene. This is commendable. I agree with some of the reasoning behind the request, as set forth in the petition. BUT**BUT**BUT...... the document has some damning and dangerous language in it concerning the Amateur Radio Service. I quote in part: "...state agencies have in the past received some help ... from amateur volunteers acting on an ad hoc basis under the Commission's Radio Amateur Civil Emergency Service (RACES). While virtually any help is welcome on an emergency, effective and coordinated disaster relief cannot be premised upon untrained volunteers and inadequate, untested patchwork radio systems."

(CONTINUED NEXT MONTH)

RARS
CALENDAR OF EVENTS

August 2
Regular RARS meeting

August 16
RARS Board meeting

August 18
Crabtree Valley Mall Traffic Night

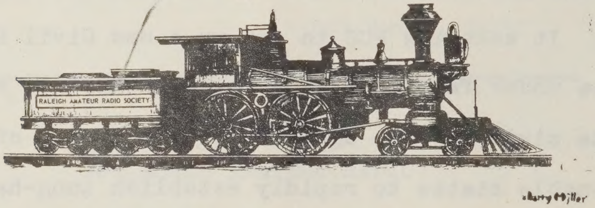
August 19, 20
Fayetteville Hamfest at Dunn

September 2, 3
Shelby Hamfest

September 6
Regular RARS meeting

RARS meets each first Wednesday at 7:30 p.m. in the West Community Room of Crabtree Valley Mall.

RARS 2 METER FM NET - Meets Every Night Monday Thru Sunday at 8:00 p.m.
146.04/146.64 Repeater
RARS 10 METER SSB NET - Monday, Tuesday, Thursday, Friday Nights
7:00 p.m. - 28.540 MHz



W4TZU

First Class Mail

RALEIGH, NC 276
JUL 28
PM
1978

RALEIGH AMATEUR RADIO SOCIETY, INC.
POST OFFICE BOX 17124
RALEIGH, NORTH CAROLINA 27609